

To: Wall, Dan[wall.dan@epa.gov]; [REDACTED] Personal Email/Ex. 6; 'Steve Fearn'[fearneng@rmi.net]
Cc: 'Larry Perino'[larry.perino@kinross.com]
From: Peter Butler
Sent: Sat 4/18/2015 5:13:11 PM
Subject: RE: Animas Sipper Data Graphs

Bill – The 2014 Elk Cr. data doesn't show the high zinc concentrations in April, but the 2013 Elk Cr. data, the 2013 A-72, and the 2013, 2014 Cascade Cr data all do. (Baker's Bridge does not.) Also, in 2014, we know the highest concentrations at A68 occurred several weeks before the sippers were deployed from data Lisa collected.

In answer to Dan's question, the zinc TVS is chronic. For zinc, the acute TVS is quite close to the chronic, only about 30-75 ug/l higher depending on hardness.

Peter

From: Wall, Dan [mailto:wall.dan@epa.gov]
Sent: Friday, April 17, 2015 7:57 AM
To: [REDACTED] Personal Email/Ex. 6; 'Peter Butler'; 'Steve Fearn'
Cc: 'Larry Perino'
Subject: RE: Animas Sipper Data Graphs

I'm not sure I follow Bill. I think it would be expected that the pre-runoff concentrations would be muted as you move downstream but I believe they are still apparent in the data at least down to CC.

Mid April zinc concentrations are the second highest and highest of the sampling period at Elk and Cascade Creeks, respectively. Both exceed the plotted TVS (are those chronics Peter?) and are present when most sensitive life stages are present (especially fall spawners). Why is this not biologically important?

This is a markedly different pattern than the upstream stations (A55 and A56) which are at their lowest (approximately) during the same time period.

BTW, we did deploy the minisippers before runoff got going in earnest (barely) so I think those earliest results are the tail end of the pre-runoff concentrations observed in the river. If anything, they are an underestimate of the risk at that time.

As an aside, last week, USGS retrieved the latest set of mini-sippers. These were deployed in November so we should have some overwinter concentrations but we pulled them out before runoff so we don't lose any units as we did in 2014. We did not deploy in the canyon this time due to logistical constraints but instead put it at BB. I heard from Lisa that the BB unit may have malfunctioned (ugg). I will let you know when the results are posted.

Talk to you all soon.

From: [redacted] **Personal Email/Ex. 6**
Sent: Friday, April 17, 2015 6:35 AM
To: 'Peter Butler'; 'Steve Fearn'
Cc: 'Larry Perino'; Wall, Dan
Subject: RE: Animas Sipper Data Graphs

Peter, what I see is that in spite of the late startup of sippers there are higher concentrations of Zn in late April and early May that are not indicated at Elk Creek and beyond. Earlier data is needed to confirm this but if it is true then the zn load from the Upper Animas may not be as important (biotically) as the serge would indicate. bill

From: Peter Butler [mailto:[redacted]] **Personal Email/Ex. 6**
Sent: Tuesday, April 07, 2015 3:21 PM
To: Bill Simon; Steve Fearn
Cc: Larry Perino; Dan Wall
Subject: Animas Sipper Data Graphs

I graphed dissolved zinc concentrations for EPA's sipper data for 2013 and 2014. You'll have to scroll around some on the spreadsheet.

Interesting to look at, although the Cascade sipper data in 2013 and Elk Creek data in 2014 have me scratching my head when I compare them to the other graphs. Unfortunately, at least in 2014, the sippers were placed too late to pick up the peak spring concentrations at A68. We can tell that by the data Lisa collected. There is also no winter data when we generally see the highest concentrations.

Maybe Dan can shed some light on this data at the April ARSG meeting.

Peter Butler

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